NTSB Lithium Battery Safety Forum
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PHMSA Mission and Vision

***Our mission* is to protect people and the environment** from the risks of hazardous materials transportation.

To do this we establish national policy, set and enforce standards, educate, and conduct research to prevent incidents; we also prepare the public and first responders to reduce consequences if an incident does occur.

***Our vision* is that no harm results** from hazardous materials transportation.

We cannot accept death as an inevitable consequence of transporting hazardous materials, so we will work continuously to find new ways to reduce risk toward zero deaths, injuries, environmental and property damage, and transportation disruptions.

Why are Lithium Batteries Regulated in Transportation?

- Present both chemical and electrical hazards
  - Can be dangerous if not packaged and handled safety while in transportation
  - Risks include short circuits, overheating or fire
  - Fires involving lithium batteries are difficult to extinguish
- Regulatory safeguards minimize risk to the public and to those involved in the transportation process

Lithium Battery Regulations

- Performance based:
  - UN Testing
  - Protect against short circuits, damage and excessive movement
  - Include safety vent or otherwise designed to prevent violent rupture during normal transport
  - Inner and outer packagings

Lithium Battery Regulations

- Risk-based provisions
  - Provisions for small (consumer type batteries) commensurate with lower risk
  - Design tests waived for:
    - Prototype/low production
    - Disposal/recycling (ground only)
  - Written approval required if battery does not meet the HMR

Notable Events and Regulatory Changes

February 2006
UPS flight 1307 (Philadelphia)

August 7, 2007
PHMSA publishes final rule covering 2002 NPRM & 2004 IFR

January 2010
PHMSA proposed to eliminate exceptions, restrict stowage and heighten testing

September 3, 2010
UPS flight 006 (Dubai)

February 2012
FAA Bill prohibits DOT from issuing or enforcing rules more stringent than ICAO

ICAO panel significantly revises lithium battery requirements

April 2012
PHMSA requests comment on domestic impact of ICAO revisions

January 2013
PHMSA requests comment on long-term impacts of lithium battery harmonization actions

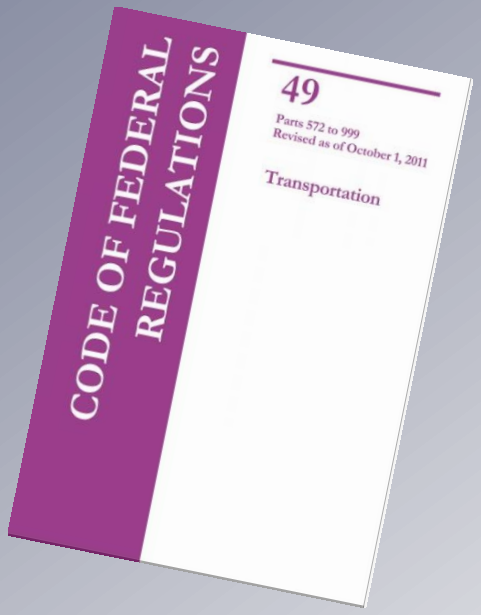
Where are we now?

- Final Rule (HM-215L) published January 7, 2013
  - Latest in efforts to harmonize the HMR with international regulations
  - Authorized the use of 2013-2014 ICAO TI
- Notice seeking further comment on whether PHMSA should adopt the ICAO lithium battery provisions into domestic rules
  - 18 comments received
  - Strong support for the 2013-2014 ICAO TI
  - Final rule under development expected late 2013

Regulatory Challenges

- Increasingly complex requirements
- Requirements differ based on the battery type, size, number of batteries in a package and presence (or absence) of equipment

Regulatory Challenges



Ensure regulations are compatible and effective

Technical Challenges

- Managing issues with large numbers of batteries shipped by air

- Modernize processes and tests to address new innovations; applications and large format batteries

Technical Challenges

End of Life Issues

Battery disposal and recycling

Damaged or defective batteries